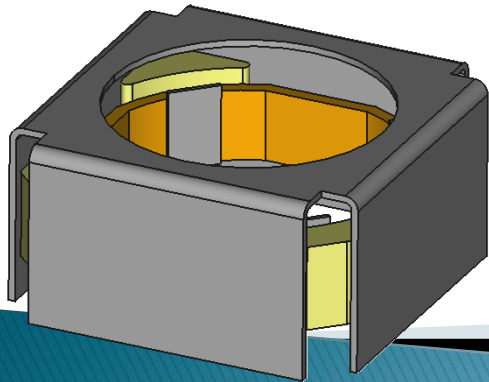
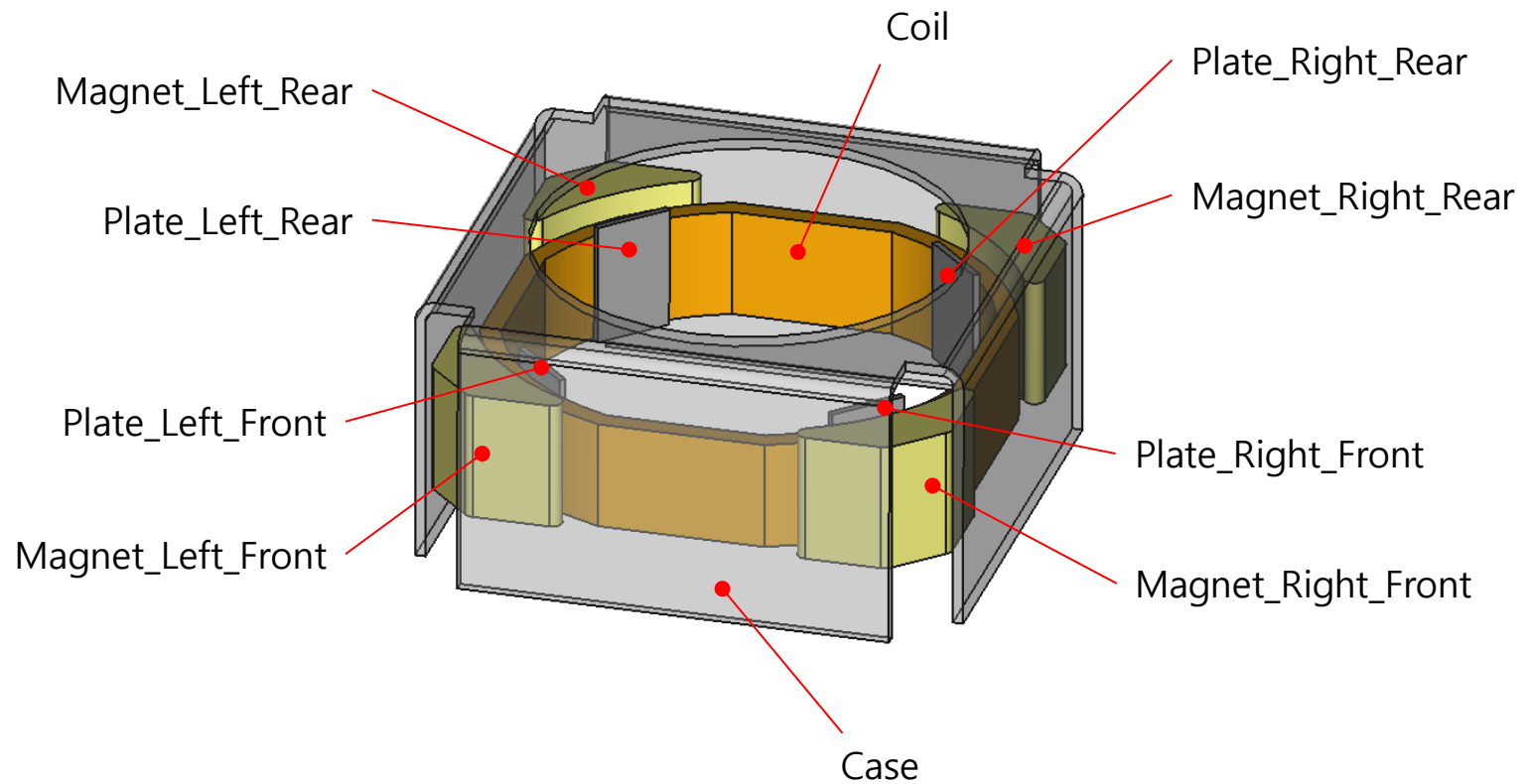


AutoFocus-Actuator Sample



2022-06-05
zgitae@gmail.com

Part Names



Part Design

Coil

▼ Common Fields	
Node Name	Coil
▼ Specification Fields	
Part Material	Copper
Current Direction	IN
Moving Parts	MOVING
▼ Calculated Fields	
Coil Turns	100
Coil Resistance [Ω]	21.96173
Resistance at 20°C [Ω]	0
Coil Layers	4
Turns of One Layer	25
▼ Design Fields (optional)	
Coil Wire Grade	Bonded_IEC_Grade_1B
Inner Diameter [mm]	7
Outer Diameter [mm]	7.6
Coil Height [mm]	1.6
Copper Diameter [mm]	0.05
Wire Diameter [mm]	0.05495
Coil Temperature [°C]	20
Horizontal Coefficient	0.95
Vertical Coefficient	1.13
Resistance Coefficient	1.1

Steel

▼ Common Fields	
Node Name	Case
▼ Specification Fields	
Part Material	SUS_430
Moving Parts	FIXED

- Case
- Plate_Left_Rear
- Plate_Left_Front
- Plate_Right_Rear
- Plate_Right_Front

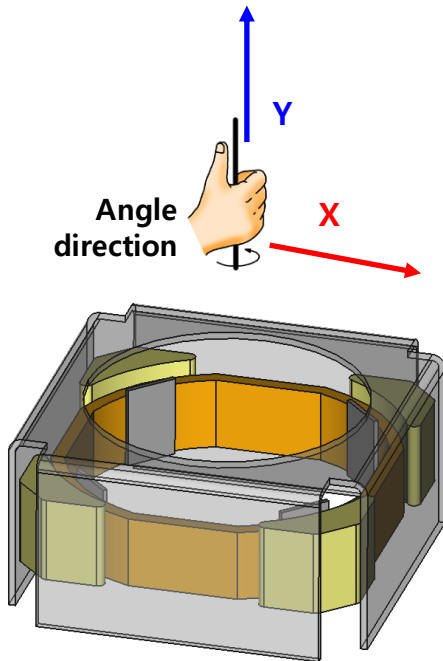
Magnet

▼ Common Fields	
Node Name	Magnet_Left_Rear
▼ Specification Fields	
Part Material	NdFeB_50
Hc	987837
Br	1,28828
Moving Parts	FIXED
▼ Magnetization Fields	
Rotation Axis	Y_AXIS
Rotation Angle	315

- Magnet_Left_Rear
- Magnet_Left_Front
- Magnet_Right_Rear
- Magnet_Right_Front

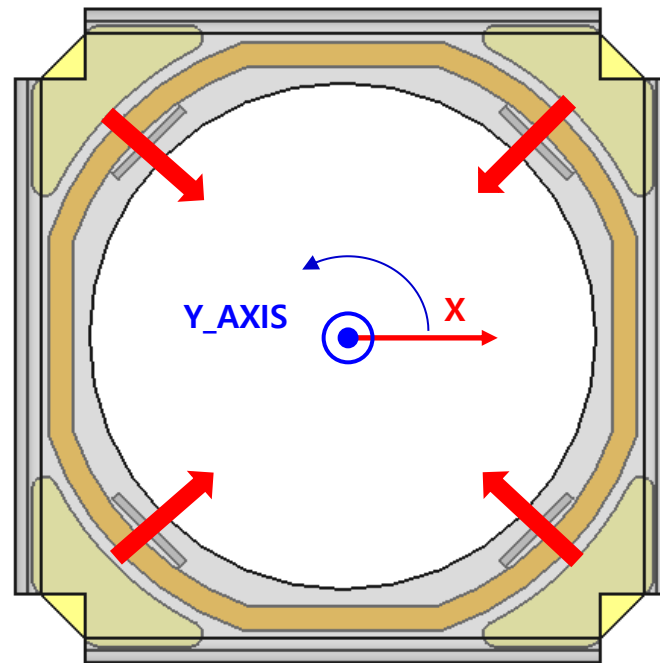
Magnet magnetization

Magnetization Fields	
Rotation Axis	Y_AXIS
Rotation Angle	225



Magnet_Left_Rear
315°

Magnet_Right_Rear
225°



45°
Magnet_Left_Front

135°
Magnet_Right_Front

[Ref.] Magnet magnetization

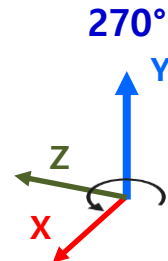
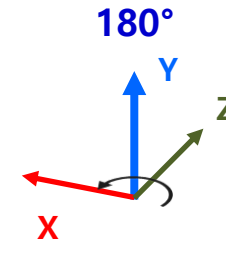
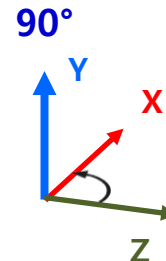
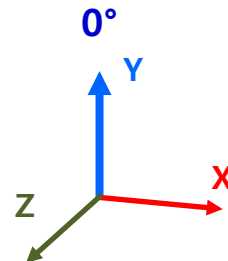
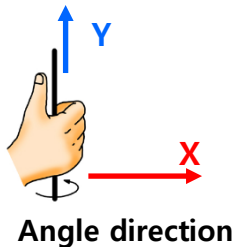
1. Understanding magnet magnetization direction

- Magnet magnetization direction: X axis direction
- Rotation Axis : The axis of rotation of the X axis
- Rotation Angle : the angle the X axis rotates

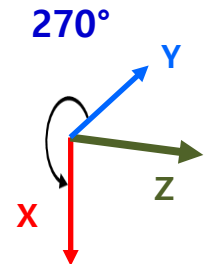
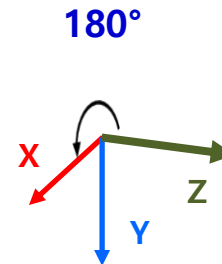
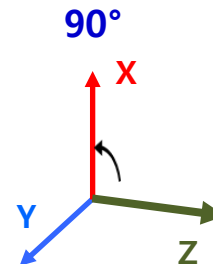
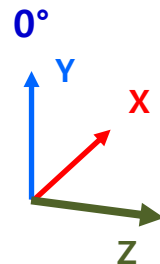
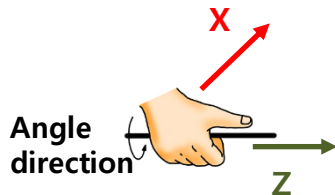
Magnetization Fields	
Rotation Axis	Z_AXIS
Rotation Angle	90

2. Magnetization direction setting

- Rotation Axis : Y_Axis



- Rotation Axis : Z_Axis



Test Results

Test Condition

✓ Common Fields	
Node Name	Force
✓ Input Fields	
Voltage [V]	2,5
Max. Current [A]	0,11383
✓ Initial Position Fields	
X Movement [mm]	0
Y Movement [mm]	0
Z Movement [mm]	0
✓ Post-Processing Fields	
B Rotation Angle [°]	45
B Vector Resolution	80
✓ Condition Fields	
Mesh Size [%]	7
Actuator Type	VCM

Results

Force Test

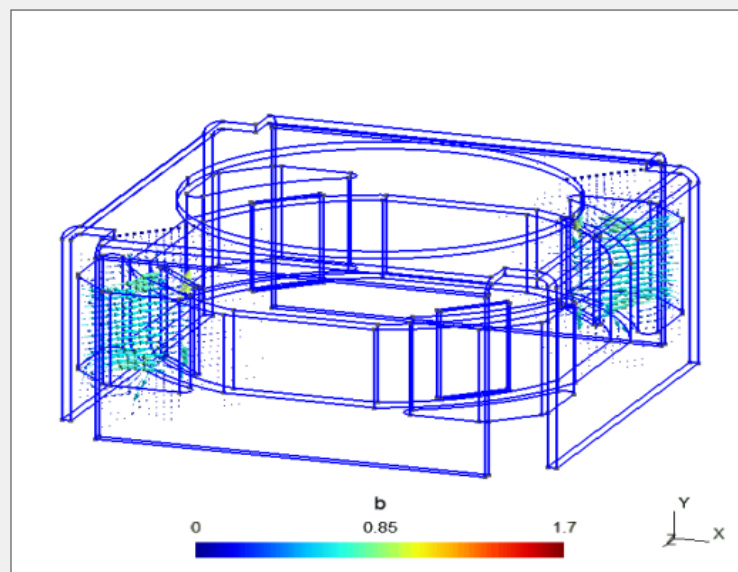
Plot B Vector

Plot Force

Force X :
0,0001 N

Force Y :
0,0209 N

Force Z :
0,0002 N



Thank You

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